

# **HIGH DYNAMIC RANGE DUAL MODE CAPACITIVE TRANSIMPEDANCE AMPLIFIER/SOURCE FOLLOWER PER DETECTOR INPUT CIRCUIT**

## **ABSTRACT OF THE DISCLOSURE**

Disclosed is a High Dynamic Range Dual Mode (HDR-DM) input circuit unit cell (10) for use with an infrared (IR) radiation detector (D1). The readout circuit unit cell includes a plurality of transistors (M1, M2, M3 and M4), switches (S1, S2 and S3), and capacitances ( $C_{fb}$ ,  $C_{bl}$  and  $C_{SH}$ ) that are controllably coupled together to form, in a first mode of operation below an illumination level threshold, a CTIA input circuit (12), and to form, in a second mode of operation above the illumination level threshold, a lower gain SFD input circuit (14).